

TREATMENT OF FALCIPARUM MALARIA WITH SULFALENE-PYRIMETHAMINE VERSUS SULFADOXINE-PYRIMETHAMINE

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INTRODUCTION

A combination of sulfadoxine and pyrimethamine (Fansidar) is one of the main antimalarials for the treatment of falciparum malaria in Southeast Asia for many years. In Thailand, a single dose of Fansidar gave a cure rate of 82% to 89% in adult patients (Harinasuta *et al.*, 1967; Segal *et al.*, 1975) and 76.7% in children (Chongsuphajaisiddhi *et al.*, 1979). However, recently the study carried out in falciparum malaria patients admitted to the Hospital for Tropical Diseases in Bangkok, during January 1978 and April 1979, showed that the cure rate obtained with 2 tablets of Fansidar was only 32% (Bunnag *et al.*, 1980).

Sulfalene (Sulfamethopyrazine) is a long acting sulfonamide with a half-life of 65 hours (Krüger-Thiemer *et al.*, 1969). A single dose of the combination of sulfalene and pyrimethamine (Metakelfin) has been successfully used in the treatment of falciparum malaria in Africa, with a cure rate of 90-100%

(Donno and Sanguinette, 1970; Storey *et al.*, 1973, Donno, 1974).

This study is aimed to compare the initial response of Metakelfin to that of Fansidar in the treatment of uncomplicated falciparum malaria.

MATERIALS AND METHODS

The study was carried out in 89 uncomplicated falciparum malaria adult cases admitted to Paholpol-Phayuhasena Hospital, Kanchanaburi Province, 120 kilometres west of Bangkok, during July 1979 and March 1980. There were 64 males and 25 females ranging in age from 12 to 65 years. Diagnosis was based on clinical signs and symptoms and parasitological examination of thick blood films stained with Giemsa.

Pretreatment, all patients were ill, with mean hemoglobin of 11.24 gm/dl and the initial parasite count averaged 17,619 asexual parasites per μ l. The patients were divided alternatively into 2 groups :-

Table 1

Patients with falciparum malaria treated with Metakelfin and Fansidar.

Group	Drugs	No. treated	Sex		Mean Hb gm per dl	Mean asexual parasite count per μ l
			M	F		
I	Metakelfin 2 tablets	46	36	10	11.87	15,228
II	Fansidar 2 tablets	43	28	15	10.58	20,176

Group I: 46 patients, 36 males and 10 females, were treated with a single dose of 1,000 mg sulfalene and 50 mg pyrimethamine (Metakelfin 2 tablets).

Group II: 43 patients, 28 males and 15 females, were treated with a single dose of 1,000 mg sulfadoxine and 50 mg pyrimethamine (Fansidar 2 tablets).

Thick blood film for malarial parasite determination was taken before the drug administration (D_0) and on the 3rd, 5th and 7th day thereafter (D_3 , D_5 and D_7).

All patients were observed clinically and parasitologically for whether treatment failure (RII,RIII) was apparent. Any complaints and side effects of the drugs were recorded by the nursing staff. General supporting treatment was given to the patients during hospitalization.

Cases in which parasitemia was cleared within 7 days (D_7) after the drug administration was considered to be initial response cured (S + RI). Cases in which parasitemia was still patent on D_7 (RII + RIII) was considered to have failed.

RESULTS

Group I: Forty-six patients were treated with 2 tablets of Metakelfin. All cases were mildly or moderately ill with a mean hemoglo-

bin of 11.87 gm/dl and mean asexual parasite count of 15,228 per μ l. Only in 7 cases (15.2%) the parasitemia was cleared within 7 days (average 4.72 days).

Group II: Forty-three patients were treated with 2 tablets of Fansidar. All cases were also mildly or moderately ill with mean hemoglobin of 10.58 gm per dl and mean asexual parasite count of 20,176 per μ l. Only in 11 cases (25.6%) the parasitemia was cleared within 7 days (average 5.36 days).

The initial mean hemoglobin and asexual parasite counts of both groups as well as the initial response cured and failed cases of both groups were not statistically different (Table 2).

No adverse reactions were observed during the course of treatment with both drugs. Cases with treatment failure were further treated with quinine sulfate 600 mg 3 times per day for 7 days.

DISCUSSION

This study showed that the initial response cure rate (S + RI) of 25.6% in falciparum malaria patients obtained with 2 tablets of Fansidar was much lower than the cure rate (S) of 89.5% when the drug was introduced into Thailand (Harinasuta *et al.*, 1967). The result is in accordance with the low cure

Table 2

Result of treatment (initial response) with Metakelfin and Fansidar.

Drugs	No. treated	No. cured*	No. failed	Mean Parasite clearance in days
Metakelfin 2 tablets	46	7 (15.2%)	39	4.72
Fansidar 2 tablets	43	11 (25.6%)	32	5.36

*Parasitemia cleared within 7 days.

rate (S) of 32% obtained in patients treated in Bangkok during January 1978 and April 1979 (Bunnag *et al.*, 1980). The lower success rates of Fansidar in the treatment of falciparum malaria patients in the provincial hospital may not represent the real situation in villages of endemic areas. The success rates of Fansidar in milder cases in endemic areas who usually do not come to the hospital may be still high. However, it is important to note that the success rate of Fansidar in the treatment of falciparum malaria is decreasing substantially in Thailand.

The initial response cure rate of 15.2% obtained with Metakelfin is not statistically different from 25.6% with Fansidar. Metakelfin can thus be used in the treatment of falciparum malaria either alone in mild cases or in combination with quinine as an alternative to Fansidar.

SUMMARY

The study was carried out in 89 uncomplicated falciparum malaria adult cases admitted to Paholpol-Phayuhasena Hospital, Kanchanaburi Province, Thailand, during July 1979 and March 1980. The patients were divided alternatively into 2 groups. Group I, 46 patients, were treated with a single dose of 1000 mg sulfalene and 50 mg pyrimethamine (2 tablets of Metakelfin). Group II, 43 patients, were treated with 1000 mg sulfadoxine and 50 mg pyrimethamine (2 tablets of Fansidar). The parasitemia was cleared within 7 days in 7 cases (15.2%) of group I and in 11 cases (25.6%) of group II. The results of both groups are not statistically significant. It is concluded that the success rate of Fansidar in the treatment of falciparum malaria is decreasing in Thailand and Metakelfin can be used in the treatment of falciparum malaria either alone in mild cases or in combination with quinine as an alternative to Fansidar.

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